To: WLAP Guidance Review Committee
From: Claudia H. Gaeddert
Date: February 9, 2005
Subject: Preparing a WLAP application

Introduction

The two main steps in preparing a WLAP (wastewater land application permit) application are:

1. Pre-application conference and
2. Submitting the WLAP application.

For the pre-application conference (Section I), I've listed items to be presented, discussed and, hopefully, resolved at the meeting.

For the WLAP application submittal (Section II), I recommend using portions of the existing forms listed below. I've prepared a list of items recommended to be included on each form (some existing, some new).

1. Application Form.
2. Facility Information Form.
3. Preliminary Technical Report Checklist.
4. Plan of Operation Checklist (For now, I recommend using the current checklist. In a separate effort I expect the WLAP Guidance Review Committee to revise this checklist.).

I recommend not using:

1. Level I, Level II, and Level III Applicability Checklists.

In addition, I've prepared a list of the typical steps towards receiving a final wastewater land application permit (Section III).

I would like the WLAP Guidance Review Committee to review the information presented in this memo and to suggest additions, deletions, and edits. Once the content is agreed upon, then we can work on formatting. What is the best format for the applicant to present and for DEQ to review the submittal? Formatting options include: forms to fill out (by hand or electronically), checklists, suggested outlines for reports, on-line interactive forms and/or tools,… DEQ is currently developing some on-line, interactive tools for the WLAP program. Portions of the WLAP application submittal may be a good match for these on-line tools.

Note: This memo does not include specific WLAP application requirements for "Direct Use of Municipal Reclaimed Wastewater" as presented in the proposed rule change. If the rule change is adopted by the legislature, the "Preparing a WLAP Application" section of the Guidance will need to be revised.

I. Pre-Application Conference

Before submitting a WLAP application, a pre-application conference should be held between the applicant and DEQ. For a new site or, if DEQ staff involved have not recently visited an existing site, consider scheduling a short site visit as part of the conference.

Preparing for the Conference

DEQ: Answer questions asked by the applicant. If an existing site, and if time allows, review the permit file prior to the conference:

- Is the current permit an original permit or a second (or more) generation permit?
- Status of compliance activities in the current permit?
- Review recent annual reports regarding: recent hydraulic and constituent loading rates, results of monitoring efforts, and other operating issues identified in the reports or through DEQ review of the reports.

Applicant: Prepare the following information (provide estimates if measured data are not available) to be shared with DEQ at the Pre-Application Conference:

- Identify the sources of wastewater
- Identify pretreatment steps prior to land application
- Wastewater Quantity: per day, per month, per year
- Wastewater Quality (of land applied wastewater): typical constituents of interest are: total nitrogen, total phosphorus, and Chemical Oxygen Demand (COD). Depending on the wastewater source, concentrations of other constituents may be important. For industrial systems, the concentration of total dissolved inorganic solids (TDIS) and/or metals may be pertinent. For municipal systems, total coliform counts should be presented.
- Proposed method of land application
- Size of land application area
- Vicinity Map and Facility Site Map: items to be shown on theses maps as part of the WLAP application are listed in Section II. Provide as much of this information as possible during the pre-application conference.
- Proposed land application schedule: growing season only or year round?
- Proposed non-growing season wastewater management: land application, storage, discharge to a surface water (NPDES permit required),…
- Calculated hydraulic and constituent loading rates for the growing season and non-growing season (if non-growing season land application is proposed).

Pre-Application Conference

A key goal of the pre-application conference is to determine the scope of the information to be submitted with the WLAP application. Items to discuss are listed below. If the scope of the WLAP application submittal cannot be determined during the conference, the applicant and DEQ should jointly agree upon a schedule for resolving any outstanding items.

- Have the applicant describe their proposal in detail.
- Review the Vicinity Map and Facility Site Map prepared for the pre-application conference. Discuss site topography, potential buffer zone issues, and other potential site constraints. Discuss what is recommended to be added to these maps for purposes of the WLAP application submittal
- Review the "Site Limitation Rating Criteria for Land-Applied Wastewater" table and discuss site specific characteristics.
- Determine recommended sampling and analysis efforts to be performed for the purposes of submitting the WLAP application. This may include additional sampling of the land applied wastewater, site soils, site groundwater, and/or other sampling important for site characterization.
- Determine the need (and, if appropriate, a schedule) for seepage rate testing of wastewater structures or ponds.
- Discuss local permits and approvals that may be required (conditional use permit, planning and zoning requirements,…).
- Discuss the ownership of the land application site. If not owned by the application, discuss the need for providing a lease or rental agreement.
- Determine if the land application site will be leased or operated by a third party. If a third party is involved, a signed contract or agreement will be required to insure the site will be operated under the conditions of the permit.
- Discuss, if appropriate, the possibility of a WLAP waiver for the site.
- Review Section II (WLAP Application Submittal) and determine what information is recommended to be included in the WLAP application.
- Discuss scheduling issues:
    - For a new site, discuss when the applicant proposes to begin land application activities.
    - For an existing site, discuss the timeframe for any proposed major changes to land application activities.
    - Discuss the overall schedule for the permit process (refer to Section III, Permit Process Steps)

II. Wastewater Land Application Permit (WLAP) Application Submittal

1. Application Form

- Type of Application:
  - new or renewal or modification (major or minor)
  - waiver
- Contact Information:
  - Legal Name of Applicant
  - Physical address for the facility
  - Mailing address, phone number, fax number, and email address for the facility
  - Name, mailing address, phone number, fax number, and email address for the facility owner
  - Identify a single point of contact responsible for entire project: Name, mailing address, phone number, fax number, and email address
  - Signature of the owner or authorized agent

2. Facility Information Form

- Type of Wastewater:
  - Municipal/Domestic
  - Industrial (describe)
  - Other (describe)
- Method of Wastewater Land Application Treatment
  - Slow rate
  - Rapid infiltration
  - Flood irrigation
  - Truck application
  - Other (describe)
- Nature of the entity owning the facility:
  - Public
  - Private
  - Federal
- Land Application Site Ownership:
  - Owned by applicant
  - Leased or rented by applicant (describe)
- Land Application Method
  - Slow-Rate
  - Rapid Infiltration
  - Overland Flow
  - Other (describe)
- Land Application Site Operation:
  - Operated and maintained by applicant
  - Operated and maintained by a third party (describe)
- County

- Site Elevation
- USGS Quadrangle
- Legal Location (Township, Range Section)
- Representative soil profile (textures and depths to 60 inches)
- Seasonal High Groundwater (depth to seasonal high groundwater and season encountered)
- Depth to Aquifer (depth to first water, depth to regional aquifer)
- Beneficial uses of groundwater (agricultural, domestic, aquacultural, industrial)
- Nearest surface water (name, distance, direction)
- Beneficial uses of surface water (agricultural, domestic, industrial, recreation, aquatic life)

3. Preliminary Technical Report Checklist

This outline is a suggested format for preparing the Preliminary Technical Report. Depending upon the applicant, some of the items may not apply and, in other cases, additional items may need to be added to the outline. During the pre-application conference, the recommended scope for the applicant's Preliminary Technical Report should be discussed between the applicant and DEQ.

I. Site Maps:

A. Vicinity Map:

The Vicinity Map is a topographic map, which may be separate from or combined with the Facility Site Map, extending one quarter (1/4) mile beyond the outer limits of the facility site. The map shall identify and show the location and extent of the following:
- Clearly marked land application site(s). For an existing site, identify the permitted hydraulic management units and clearly show any proposed changes to the land application acreage.
- Well, Springs, wetlands and surface waters.
- Public and private drinking water supply sources and source water assessment aras (public water system protection area information).
- Public roads
- Dwellings and private and public gathering places

B. Facility Site Map:

The Facility Site Map is a topographic map identifying and showing the location and extent of:
- Clearly marked land application site(s). For an existing site, identify the permitted hydraulic management units and clearly show any proposed changes to the land application acreage.
- Wastewater inlets, outlets, and storage structures and facilities.
- Wells, springs, wetlands, and surface waters.
- Twenty-five (25), fifty (50), and one hundred (100) year flood plains, as available through the Federal Insurance Administration of the Federal Emergency Management Agency.
- Service roads and berms.
- Natural or man-made features necessary for treatment.

- Buildings and structures.
- Process chemical and residue storage facilities.
- Wastewater and site monitoring points.
- Buffer zone distances between the land application site and: dwellings, areas of public access, canals/ditches, private water sources, and public water sources.

C. Other Site Specific Maps and Drawings:
- Present other pertinent maps or drawings for the site. These may include groundwater contour maps, wastewater treatment facility drawings, irrigation system design drawings, or others as important.

II. Process Description:

A. Site Location:
- Describe the location of wastewater treatment facility and, if different, the location of land application site.
- Describe relative locations of important land features (cities, roads, waterways,…) to the treatment facility and land application site.

B. Process Flow Description:
- Provide a description of the flow of wastewater from the wastewater source to the land application site.
- Identify the major treatment steps (equipment) of the wastewater treatment facility.
- Identify sizes and design capacities of major equipment.
- Identify the flow design basis. For existing sites, present recent wastewater flow data.
- If applicable, describe any alternate treatment methods being considered.
- Describe procedures that would be followed if the principal wastewater treatment procedures could not be used temporarily.

C. Land Application Site:
- Identify the number of land application acres. If a currently permitted site, list the current hydraulic management units and associated acres.
- Describe any proposed changes to land application acreage.
- Provide updates on current or proposed uses of the land.
- Identify the type(s) of irrigation system(s) (pivot, hand lines,…) and the corresponding irrigation efficiency(ies).

D. Ownership and Management:
- Identify who owns the land application site. If not owned by the applicant, describe any pertinent leases or agreements in place.
- Describe who operates and maintains the wastewater treatment facilities and land application site.
- Describe operator certification credentials—credentials currently held and any plans for future certifications.

III. Site Characteristics

A. Site Management History:

- Describe past and current uses and management of the land application site.
- Describe important events and dates, cropping information, and other key site management information.
- Describe proposed cropping plans and the past, current and proposed future use of fertilizers at the site.

B. Climatic Characteristics:

- Describe the climatic characteristics of the site including precipitation data.

C. Soils:

- Describe site soils. Present Soil Conservation Service (or similar) soil survey information and results of any on-site investigations.
- Present and interpret available soil monitoring results.
- If wastewater land application in the non-growing season is proposed, calculate and present the available water holding capacity of the soils.
- Describe what soil monitoring is recommended to be included in the permit (methodology, frequency, location).

D. Surface Water:

- Identify and describe the location of surface water(s) near the land application site.
- As applicable, discuss canals, wetlands, springs, floodplains, and other surface water related site characteristics.

E. Groundwater/Hydrogeology:

- Describe the groundwater system including: depth to first water, depth to regional groundwater, confined or unconfined (if known), flow direction (if known), and seasonal depth and flow direction variations. If applicable, describe the presence of a major aquifer.
- Discuss the locations and uses of nearby wells.
- Present and interpret available groundwater monitoring results (upgradient and downgradient of the land application site) and/or on-site investigations. Present and interpret results of any groundwater modeling efforts for the site.
- Describe what groundwater monitoring is recommended to be included in the permit (methodology, frequency, location).

IV. Hydraulic and Constituent Loadings

A. Wastewater Quantity:

- Identify the quantity of land applied wastewater to be addressed in the permit (per day, per month, per year). Document how the quantity values were determined.
- Propose how the quantity of land applied wastewater is to be monitored in the permit (methodology, frequency, location).

B. Wastewater Quality:

- Characterize the concentrations of key constituents in the wastewater proposed for land application. Document how the concentration values were determined.
- Describe what sampling and analysis of the land applied wastewater is recommended to be included in the permit (methodology, frequency, location)..

C. Hydraulic Loading Rate:
- Based on the proposed cropping plan, calculate and present the site Irrigation Water Requirement (IWR). Document how the IWR value(s) were determined.
- Present the expected wastewater hydraulic loading rates—growing season and non-growing season.
- Describe the availability of supplemental irrigation water for the site and whether or not supplemental irrigation water is expected to be used at the site. If expected to be used, calculate and present the expected supplemental irrigation water hydraulic loading rate. Also, propose how the quantity of land applied supplemental irrigation water is to be monitored in the permit (methodology, frequency, location).
- Discuss irrigation scheduling for the site.
- If storage of wastewater is included as part of the wastewater management plan, prepare and present a monthly water balance for the storage structure(s) reflecting: number of days of storage, required freeboard, minimum depth, evaporation, precipitation, and flows into and out of the structure.

D. Constituent Loading Rates:
- Calculate and present the expected growing season and non-growing season loading rates for key constituents.
- Compare expected constituent loading rates to applicable crop uptake values for the site.

V. Disinfection and Buffer Zones
- Provide a discussion of disinfection and buffer zone issues for the land application site. Address the following buffer objects: dwellings, areas of public access, canals/ditches, private water sources, and public water sources.
- Compare site buffer distances to DEQ guideline buffer distances. As applicable, describe any proposed mitigation measures to potentially reduce the required buffer distances.
- Describe current and/or proposed fencing and signing for the facility.
- If the site has previously developed a Buffer Zone Plan, provide any updates to the information presented in the plan.
- If the site has previously prepared a Well Location Acceptability Analysis, provide any updates to the information presented in the analysis.

VI. Site Management
- If an existing site, provide a summary and status of compliance activities in the existing permit.
- Discuss the need (and, if appropriate, a schedule) for seepage rate testing of wastewater structures or ponds.

- If the site has previously developed any of the following plans (or other site specific plans), provide any updates to the information presented in the plan(s):
    + Grazing Management Plan
    + Nuisance Odor Management Plan
    + Waste Solids Management Plan
    + TDIS Management Plan

If a new site, or if the above plans are not developed for an existing site, address each of the above plan topics.

- Discuss other important site management issues.

4. Plan of Operation Checklist

Note: It is expected that the WLAP Guidance Review Committee will revise this checklist.

- For existing sites, a detailed plan of operation should be submitted with the WLAP application. ***Although this is currently required, this is not typically done. The WLAP Guidance Review Committee should decide if we recommend that an <u>updated</u> Plan of Operation be submitted with the WLAP application (not just have DEQ review the "latest version" available in the file).***
- For new sites, a draft outline of a plan of operation should be submitted

5. Site Documentation Checklist

- Land Application Site Ownership: provide documentation of site ownership.
- If the applicant is leasing or renting the land application site, provide a copy of the lease or rental agreement.
- Identify who will operate and maintain the land application site: the applicant or a third party? If a third party, submit a copy of the signed contract or agreement outlining how the site will be operated to meet the conditions of the permit.
- Provide copies of any other agreements affecting the ownership and/or operation of the site (right-of-way easements, for example).
- List all local, state, and federal permits/licenses/approvals related to the land application facility. For each, list the date(s) of application, the current status, and, if applicable, the approval date. Include any required planning and zoning approvals and/or required conditional use permits.

III. Wastewater Land Application Permit, Permit Process Steps

Major steps associated with obtaining a Wastewater Land Application Permit (WLAP) from DEQ are as follows:

Step	Timing
1. Hold a pre-application conference between the applicant and DEQ	
2. Applicant submits a WLAP application to the DEQ Regional Office.	1. At least 180 days prior to the day on which a new activity begins. 2. At least 180 days prior to the expiration of a permit.
3. DEQ performs a completeness review. Typically, at this step, DEQ also makes a preliminary decision on whether or not to issue a permit.	Typically, DEQ allows 60 days for a completeness review. DEQ may choose to "restart the clock" if key additional information is required for a complete application.
4. DEQ prepares a Staff Analysis and Draft Permit for the complete application.	
5. DEQ issues a draft permit. This step includes review of the draft permit and staff analysis by DEQ's state program office and the DEQ Director. The draft permit and staff analysis are posted on the DEQ internet site.	It typically takes 3-4 months for DEQ to issue the draft permit after a complete application is available. This period, however, may last longer.
6. Hold meetings as needed between DEQ and applicant to discuss the draft permit. Hold public information meetings, as appropriate. Comments may be submitted by the applicant and by the public.	Typically, a 30-day comment period.
7. DEQ prepares responses to comments and prepares the final permit. If substantial modifications are made to the permit, review with DEQ Director.	
8. DEQ issues final permit. The applicant may appeal the final permit, if desired.	